approach

NOVEMBER 1977 THE NAVAL AVIATION SAFETY REVIEW

The versatile TA-4J will remain the advanced strike trainer for some years to come.

An interview with the Chief of Naval Air Training

"Simulators are good, but they will never replace flying the airplane."

The training that a naval aviator receives has a direct relationship on how safely he will fly, and thus on the overall naval aviation safety record. While an aviator's training never really ceases, his formal training received prior to designation is probably the most significant, because here he learns the basics that he must build on for the rest of his aviation career.

Are the aviators of today as well trained when they hit the Fleet as their predecessors? Probably every generation of aviators asks that question. And things have not stayed the same in the Training Command. New aircraft, increased use of simulators, and different instructional methods are probably only a few of the changes older naval aviators would observe if they returned to the Training Command. To get an update of the Naval Air Training Command and try to get an idea about the quality of today's flight student, APPROACH writer Richard Shipman interviewed RADM Burton H. Shepherd, Chief of Naval Air Training.

Admiral, let's start with the hardest question first. Why has the CNATRA accident rate worsened from .31 in FY-75 to .34 in FY-76, to almost double – .56 – through July of this fiscal year?

I really don't think the accident rate is very high. Back in 1969/70, it was almost unthinkable that we could reduce the all-Navy rate below .60. Now, as of September, our safety rate is below .50, and you're asking why it's so high. When you go for a long time with very few accidents, it gets progressively harder to lower your accident rate. Additionally, when you have a small number of accidents that form your statistical base, one or two extra accidents distorts the picture somewhat by causing the accident rate to go up rather disproportionately. We've had a series of

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"Nobody can do as good a job of training naval aviators for the Navy mission as the Navy."

accidents caused by factors largely beyond our control – struts falling off T-2s, an A-4 engine-driven fuel pump failure, T-28 master rod failures in the engines, and two bird strikes. If you discount those, our rate would be down significantly and would be comparable to or better than last year.

I'd like to emphasize that safety is our No. 1 goal. I've emphasized to squadron leadership – officer and enlisted – that there is not a single flight that *has* to go out. If any compromise of safety exists, we can always delay, cancel, or abort. I feel certain that feeling pervades the command.

In addition to the factors out of our control, we are faced with a shortage of Group IX personnel, particularly supervisory. We have enthusiastic junior maintenancemen who want to fix airplanes and fix them right, but once in a while, an eager young troop will make a mistake, simply due to his inexperience or lack of supervision.

Some of your material problems will undoubtedly be alleviated by introduction of new aircraft such as the T-44 and the T-34C. The T-44 is already in operation, but what is the status of the T-34C program?

They were supposed to have been delivered in December of last year, with student flying scheduled for January of this year. Right now, it looks like next January before students will be able to start flying this new aircraft.

As you know, there have been two accidents associated with the aircraft test program as the upper limits of the speed envelope were explored. Thus the program has been delayed to allow complete analysis by NAVAIR and the factory to make sure we have a safe airplane to fly.

Will introduction of the T-34C cut down the total hours in the syllabus?

It won't really change the total hours; it will only redistribute them. By flying more hours in the T-34C as opposed to the jets and other advanced trainers, we can save substantial sums of money. The T-34C has an excellent instrumentation package that will enable the student to do everything in that aircraft that he can do in later airplanes. Also, the longer initial phase of training establishes more data points and flight time to determine where the student pilot will best be able to perform in later training – props, jets, or helicopters.

What role will simulators play in the future, and specifically, how much value has the A-4 visual simulator been?

We have transferred a lot of training to the simulators, and the simulators are good. But, in my view, they will never replace flying. There seems to be a tendency by some in the analytical community to say we can substitute 25 percent simulator time for flight time and thus save x million dollars. That might be true for trained pilots transitioning from one aircraft to another. But our job is to

The T-44 is already in service in the Training Command, replacing the aged TS-2A.

"The SERGRADs have done a wonderful job of instructing for us, but my basic philosophy is that the best kind of training comes from Fleet-experienced instructors who have been there and can relate training maneuvers to what the student will encounter in the future."

train the individual who walks up to an airplane, and you tell him, "This is an airplane," and he says, "Really?" We are continuing to push for simulators – but slowly. If you bite off more than you should, safety is compromised. Also, you don't guarantee that you get the top quality pilot needed to fly modern aircraft such as the F-14.

Regarding the A-4 visual, it is good for some things. It offers the student a general look at the VFR landing pattern, the bombing pattern, and the ship. We have replaced one or two flights in FAM stage with four or five visual simulator hops, and added some simulator flights to weapons stage, but that's about the extent for now.

We could do a lot with more sophisticated simulators, but you would have to spend a lot of money – more than we have available now.

Admiral, the PTR [pilot training rate] has traditionally been a source of much interest and often aggravation among instructors and students. Long hours and overtime seem to be the rule rather than the exception in trying to meet the PTR. How does the PTR compare to past years, and what will it look like in the future?

The PTR has been coming down from the Vietnam years – down from about 2000 to 1400 this year. It will probably go down further next year to around 1300 and then go back to 1500 in the early '80s.

Regarding the instructors' long hours – and that's what I hear from them on my visits to the squadrons – we're simply short of instructors. In fact, over the next couple of years, we will probably be 200-300 instructors short, out of a total population of 900 or 1000 instructors. My philosophy has been that the work is good, and we would be remiss if we didn't use all of our assets to the maximum. In my opinion, a 5½-day workweek is not unreasonable all the time, and a 6-day workweek is not unreasonable occasionally. I draw the line at a 7-day workweek, because this compromises safety and the ability of the individual and his family to cope with it. We're not at war, and we shouldn't ask our people to give that much during peacetime duty on a regular basis.

Some squadrons do work 7 days a week, but on a staggered schedule. When we reach that point where the weakest link in the squadron – be it a mechanic or pilot – is stretched to a point where he has to work 7 days consecutively, then we'll fall back to a 6-day week.

What I see for the future is pretty much what we are doing today.

After all the hard work to complete the students, are they getting good flying jobs? Have we gotten away from the "stash" concept that sent newly designated aviators to proficiency or nonflying billets?

Yes, we have. There is no excess of students coming out of the Training Command. In fact, there is a shortage. The days of searching for a billet for our new aviators are over. My primary concern now is meeting the RAG class dates, and so far, we have been doing that.

What has the lack of excess students done to the plowback program, and how do you feel about retaining new graduates for immediate instructor duty?

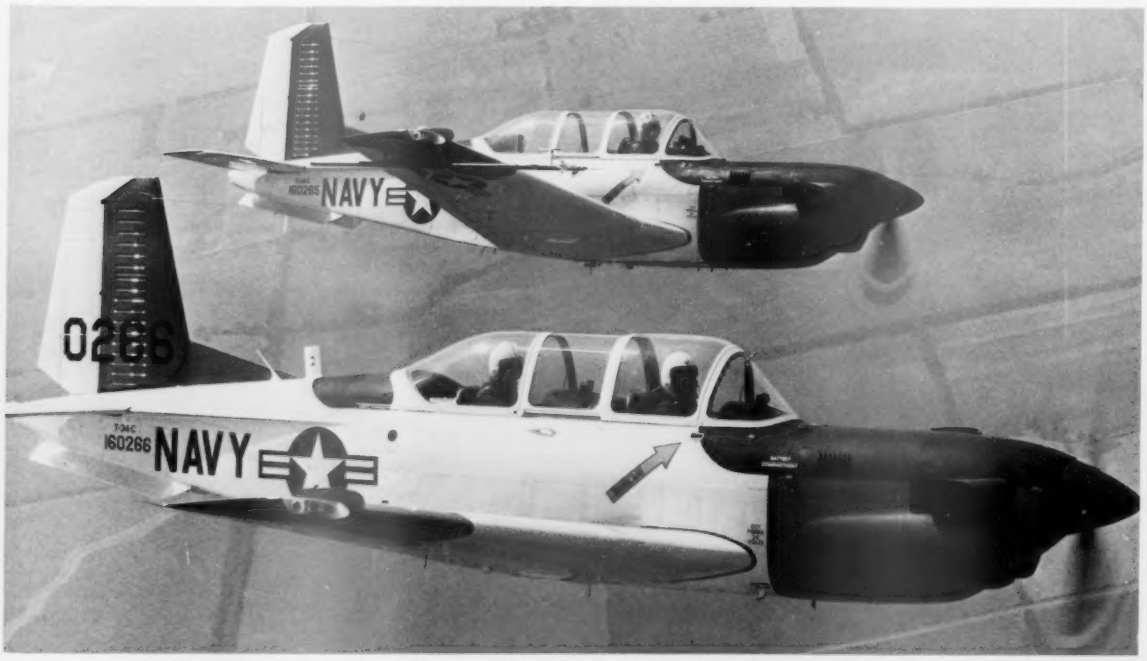
As of last December, our final plowback or SERGRAD or whatever you want to call him entered the program. There are, of course, quite a few left in the Training Command – about 21 percent of the total. And they've done a wonderful job. They're young and have just completed training, so they can relate to the students rather well. But our basic philosophy is that the best instructor has been to the Fleet and can relate training maneuvers to what the student will encounter later. The Fleet-experienced instructor can tell his student to do this instrument pattern because it will help him when he gets out to marshal some black night off a carrier, or down low in a night ASW pattern 900 miles out over the open ocean. That transfer of experience is hard to quantify, but I feel firmly that the best kind of training is from the people who have been there.

Admiral, how do you monitor individual student quality within the Training Command, and do you have any means of identifying to the Fleet Replacement Squadrons the real topnotch flight student and the below average flight student?

In answer to the first part of your question – the progress of each student naval aviator is monitored and closely scrutinized throughout their entire flight training. Frequent flight evaluations and progress reviews are administered during the student's training. The existing high quality requirements identify marginal performers for attrition or additional training to overcome weaknesses and achieve the required level of performance. Any student completing with a flight grade or practical work grade one

APPROACH is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price: $11.70 per year; $2.95 additional for foreign mailing. Subscription requests should be directed to: Superintendent of Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Norfolk, VA.

"There's absolutely no question in my mind that we are producing the best pilots we have ever had."



The T-34C will alter the training sequence significantly, because it can do so much for less cost.

and one-half standard deviation below the squadron average during the last 6 months of training goes before a Field Naval Aviator Evaluation Board to determine his or her suitability for naval aviation. In short, we have an effective and efficient means of monitoring the quality of our student naval aviators.

In answer to the second part of your question – we have a system whereby the Fleet Replacement Squadrons and fleet squadrons provide fleet requirements to the Naval Air Training Command for consideration as changes and/or inputs to the appropriate NATRACOM flight curriculum. In addition, Fleet Replacement Squadrons [FRS] are provided detailed summaries of the performance of each newly designated aviator ordered to their unit to assist their initial training requirements. Followup action is taken on all FRS and Fleet Field Naval Aviator Evaluation Boards and aircraft accidents which involve first tour aviators. This data is reviewed with their training command performance, and feedback is provided to the training air wing commander to assist them in monitoring the quality of their product. Each of these actions has been designed for the purpose of producing the best naval aviators and naval flight officers possible.

The review process following a SPDB (student pilot disposition board) is often frustrating and discouraging for the flight instructor. He judges a student to be unsafe and initiates the procedures for a down or a SPDB maybe once, twice, or three times, and so often the student comes right back, as various echelons of command overrule the instructor's judgment. Sometimes it seems like it's just impossible to attrite a student. When this atmosphere exists, it is possible for instructors to get the attitude of "Well, it won't do any good to give him a down," so they let a marginal student go through.

I certainly hope that is not the case. I've told instructors I want quality – not quantity. Hopefully, we're smart enough that we don't have to wash out an excessive number of students, but some attrition is inevitable and even desirable. We don't have quotas on anyone. We do have a PTR goal, but hopefully, it is regarded as a necessary and useful tool we can use to manage our assets as best we can

"We pay COs, wing commanders, and CNATRA to weigh the cost of a student's training versus his future potential, and I'm convinced they do an outstanding job of weighing that balance and arriving at a decision that's in the best interest of the Navy."

rather than a hard and fast quota that must be met at any cost. Anyone that is unsafe – and proven unsafe – should not complete. But what is unsafe? What that instructor sees as unsafe may be viewed by another instructor as simply a maneuver that needs more practice. Therefore, we have a review process by mature senior naval aviators who weigh how much money has been invested in the student, how much difficulty the student is having, and if he's not performing too far from the norm, can his training be salvaged? That's what we pay COs, wing commanders, and CNATRA for, and I'm convinced that they do an outstanding job weighing the balance and arriving at a decision on a case-by-case basis for the benefit of the Navy. I think that's doing the job the taxpayers are expecting. I have seen no tendency to push students through, and I've been looking for it.

You never hear about the individual with relatively low grades who went on to burn up the course and in a few years become a squadron CO. Individuals learn at different rates, and you have to treat them on a case-by-case basis.

In this era of almost total positive control, are the students receiving the training necessary to be capable of fighting a basically VFR war under conditions such as we encountered in Vietnam?

There seems to be a tendency to think we can't exercise judgment and headwork in our controlled environment, but I think there are enough opportunities in our syllabus to give the student this experience. If we had more time and money, we could give him more, but we are constrained. We still offer quite a few solo flights, and I see no reason why the pilots we are graduating today would have any trouble operating in an environment such as Vietnam.

How do you feel about consolidated military flight training?

Well, we've actually started consolidated training, with the navigator training conducted by the Air Force at Mather AFB. I've visited their facilities, and they are just outstanding. The training our navigators are getting is topnotch.

As you probably know, consolidated helicopter training has been discussed for some time using Army facilities at Fort Rucker. I've also visited there, and they do a wonderful job training Army pilots for the mission they perform. My personal opinion, however, is that nobody can do as good a job training naval aviators for the Navy mission as the Navy.

One final question, Admiral. Are we producing as good a pilot today as we have in the past?

There's absolutely no question in my mind that we are producing the best pilots that the Navy has ever had. We are getting a better product coming into the program – the FAR/AQT aptitude test scores have never been higher – and we are getting a better pilot coming out. Navy pilots today have to be capable of flying aircraft of increasing sophistication and complexity. I feel confident that the Navy pilot of today is the best ever. ◄

"There is not a single flight that has to go out. If any compromise of safety exists, we can always delay, cancel, or abort."

About RADM Burton H. Shepherd, USN
Chief of Naval Air Training

As the Chief of Naval Air Training, RADM Shepherd coordinates the activities of 6 naval air stations, 22 training squadrons, approximately 1000 aircraft, and some 19,000 military and civilian personnel located in Florida, Mississippi, and south Texas. The Naval Air Training Command also includes the "Blue Angels" Navy Flight Demonstration Squadron, the training aircraft carrier USS LEXINGTON, and the Naval Aviation Schools Command. The Naval Air Training Command trains approximately 2000 new pilots and Naval Flight Officers each year for service in the Navy, Marine Corps, and Coast Guard. Fliers are trained for several foreign allied nations as well.

RADM Shepherd was Inspector General of the Navy prior to assuming his duties as Chief of Naval Air Training on 1 August 1975. While holding the rank of captain, he served as the commanding officer of the attack aircraft carrier USS AMERICA during 1972-73. Under CAPT Shepherd's command, the AMERICA was on station in the Tonkin Gulf when the peace was signed on 27 January 1973.

He served as Executive Assistant to the Chief of Naval Operations and to the Vice Chief of Naval Operations. He also served in the Systems Analysis Division of OPNAV.

CDR Shepherd served as Commander, Air Wing 16 aboard the carrier USS ORISKANY in Southeast Asia in 1967. He was the executive officer and commanding officer of Attack Squadron 81 during two FORRESTAL Mediterranean deployments in 1964 and 1966.

RADM Shepherd graduated from Western State College of Colorado and has done graduate work at the University of Chicago and George Washington University. He earned his Navy wings as a Holloway Plan Midshipman in November 1948.

RADM Shepherd has been awarded the Navy Cross, two Silver Stars, six Distinguished Flying Crosses, three Legions of Merit, the Bronze Star, eight Air Medals, and several campaign medals.

The night my goose was just about cooked (frozen)!

By LT W. W. White
VA-128

I HAVE heard stories of the unsuspecting goose that was sucked aloft by the thunderstorm and spit out the top . . . frozen to death. Well, now that the weather is getting cold again, that night last January when my goose was just about frozen comes back to me. My heartbeat quickens just to think of it!

As the R1820's on the C-1A started to wind down on shutdown, I started giving orders to ensure that everything would go smoothly. We were on a stopover flight plan from NAS East and had to stop at NAS South for fuel before continuing to NAS Midwest. I was accompanied that night by my copilot, LTJG Solid Stick, aircrewman ADR3 Eager Beaver, and a passenger, Home Free.

Everything went like clockwork, and I soon found myself in the weather office. "Good evening, gents. I am here on a stopover flight plan. I'd like to check the weather at NAS Midwest."

"Well, sir, the weather is not too good at destination. Let's see, about 2½ hours enroute, they are calling for 1200 overcast, 5 miles visibility, with temporary condition down to 800 overcast and 2 miles visibility in rain showers. Also a slight chance of snow later tonight. Do you still want to use that AFB for an alternate?"

"Yah, I do. They have an ILS besides the GCA, and it will only take 15 minutes to get there. What is the freezing level, weather enroute, and what's the AFB calling for?"

"Oh, freezing level is 8000, and you should be in and out of clouds enroute until about 100 miles before NAS Midwest . . . then mostly in clouds. The AFB is called for the same weather as Midwest."

"Thanks alot!"

Everything went just as planned. I would fly to about 150 miles from the destination, then switch seats and let Solid Stick fly the approach . . . good training, and he would be nice and fresh.

We switched seats and began setting up for the approach. We requested a GCA to 35 and backed it up with a TACAN 35. Prelanding checks were complete, and we were ready for the approach.

"Approach, Navy 020 is with you level 8000; requesting GCA to 35."

"Roger, Navy 020. Are you ready to copy the latest Midwest weather?"

"Approach, Navy 020, affirm."

"020, NAS weather 700 overcast, 3 miles in light rain, and you might encounter some freezing rain in your descent. We have had some weather moving in."

"Roger, 020 copies."

A quick check of the fuel gages . . . well over an hour and a half's worth. Pitot heat on and time check 2240.

So we descended to 3000 and started to pick up a slight amount of rime ice. The heater was secured on the landing checklist and GCA picked us up. As we started down, we encountered heavy rain at about 2000 feet. Windshield wipers came on. As I watched the wipers clear the windows, I couldn't believe it! The windshield had frozen solid in a split second! We were now covered with one-fourth inch of solid, clear ice. I had the impression of just getting into a car that was covered with frost on a cold winter morning.

"Solid Stick, boots and prop deicers coming on. Fly a little faster due to ice on the aircraft."

I frantically tried to relight the heater and defroster – nothing! Circuit breaker had popped . . . and kept popping! I tried the windshield alcohol . . . no joy!

Through the earphones I heard, "Decision height, if field not in sight, execute missed approach. Climb straight ahead to 3000 feet."

I looked outside the aircraft, and it was like looking through an ice cube. I could tell that we were below the overcast because all the lights were bright and blurry.

Solid Stick climbed to 3000 feet and the controller said, "State your intentions."

"Roger, Approach, Navy 020, I can't stay at 3000. I am collecting more ice. Climb me to 6000 . . . I was just there and it's warmer. I would like another approach, but leave me at 6000 until 6 DME to descend."

I briefed Solid Stick to make a descent which would put us minimum time in the freezing zone. A difficult approach to fly but quite necessary. Also, I had the heater and defroster back on the line, but didn't know for how long. I also had the Aldis lamp set up to burn a hole in the ice if

everything failed. I thought we would make it in this time for sure!

The icing was exactly as before – covered in a flash of an eye! But this time I was burning a hole through the ice with the lamp . . . until the lamp burned out!

Just before decision height, I could see out of a very small hole . . . so I took the aircraft. As I was setting up and I heard the DH call, the hole I was looking out froze over! I added power and told Approach I was climbing to 6000. I gave the aircraft back to Solid Stick and tried to assess the situation.

"Hey, Approach, Navy 020, what's the story with this front?"

"Navy 020, it started about 20 minutes before you began your approach and is getting worse."

"What about the AFB about 30 miles away?"

"Roger, 020, they have the same type weather. In fact, the entire area is grim!"

As I heard that, my eyes looked at the fuel gages, and my voice went up two octaves.

"Eager Beaver, I want my survival knife that's in my vest, and I want it now!"

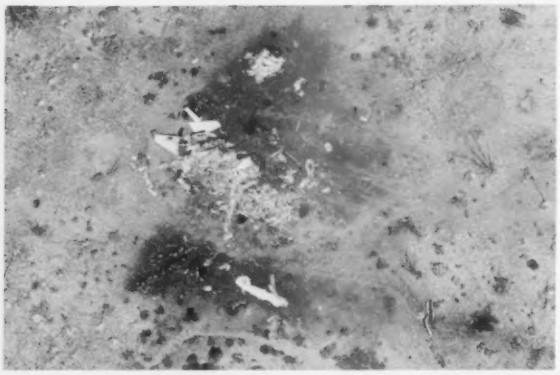
"Navy 020, I have an update on weather. Midwest is 500 overcast, 2 miles in light snow showers . . . first 3000 feet of runway is solid ice, and last portion is snow and ice . . . do you request an arrested landing?"

"That's affirm!"

As I considered our options, I had to force myself to be calm. OK, gas enough for at least two, maybe three more approaches. I can open the overhead hatch (being careful not to extend my arm close to the propeller) and try to scrape the ice off the windshield with my knife on the first approach, break out the window with a crash axe on number two, and I don't want to think about number three.

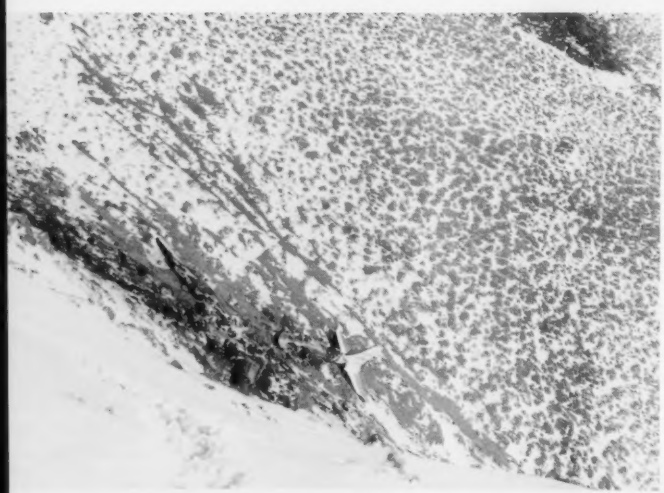
As soon as the ice was on the window, I opened the hatch and pulled myself up to where I could stick my hand out and scrape a small hole in the ice. Somewhere around 400 AGL I could see the field through the hole. I took the aircraft and flew it slightly fast until over the runway, then set an attitude. The excess airspeed floated us over the arresting gear. The rollout was not bad. Once we were safe, Solid Stick took the aircraft. As we turned off the runway, I was sort of stunned . . . we had started this mess at 2240, and now it was 2320 . . . fuel was just above red lights. We owed a lot of thanks to that GCA controller and Approach Control. I learned more than the .7 in my logbook could possibly tell. ◄

Mountain waves:



Mountain waves can spell disaster for low-flying jets as well as helos.

A POWERFUL AND DANGEROUS FORCE



Mountain waves; a powerful force that demands pilot knowledge and caution.

A NAVY T-39 trainer was flying a low-level, high-speed navigational training route in mountainous terrain when it encountered severe turbulence. Gust acceleration loads were so high that aircraft design limits were exceeded, resulting in separation of the tail assembly from the aircraft. The plane flipped inverted from its 500-foot altitude and crashed, killing all five crewmembers. Mountain waves – the result of wind flowing over mountainous terrain – were identified as the cause of the severe turbulence. The crew's perfunctory VFR weather brief and their lack of understanding and awareness of mountain air turbulence contributed to this tragic accident. Indeed, mountain waves are a significant hazard that demand aircrew knowledge and caution whether you are flying helos, props, or jets.

Mountain waves – also known as lee or gravity waves – are produced when normal windflow is disturbed by a mountain or substantial ridge of high ground. Mountain wave airflow patterns (Fig. 1) result in waves flowing for miles downwind of the mountain ridge. Wave lengths may be as long as 30 miles, with the average wave being about 5 miles. While larger mountains produce greater waves, turbulence associated with windflow interruptions can exist from relatively small hills or ridges.

Hazards to aircraft exist due to the extreme turbulence and the severe downdrafts and updrafts associated with mountain waves. The severest area of turbulence is found in the "rotor zone" (Fig. 1) located beneath the crest of the waves. The magnitude of the vertical currents is dependent on the height of the mountain above surrounding terrain. Large mountains can produce currents with speeds in excess of 5000 fps – obvious hazards to the low flier.

Mountain waves are most likely to be found when the following conditions exist:

- A marked stable airmass (little temperature change with altitude) through some layer of the atmosphere on the windward side of the mountain.
- Wind blowing perpendicular to the mountain or ridge, and the direction of the wind remaining mostly constant with height.
- Windspeeds in excess of 20 knots, and windspeed increasing with height.

Although waves are most likely to form in these conditions, they can also be formed in other circumstances.

Lee waves can often be detected by the characteristic lenticular (double convex) clouds which may form in the wave crests (although these characteristic clouds may be obscured by other clouds). Also, mountain and ridge lines where snow or blowing sand and dust are seen rising off the crest give the pilot a clue about the existence of gravity waves. If these conditions are sighted in conjunction with the conditions described (as received in the weather brief),

deviation around or over the mountain area is the prudent action.

How high must an aircraft pass to avoid the effect of gravity waves? While turbulence caused by extreme mountain waves can extend into all altitudes that Navy aircraft use, dangerous turbulence can usually be avoided by clearing the mountains at least half again as high as the AGL height of the mountain. Thus, a 4000-foot mountain located on terrain 2000 feet above sea level should be overflown at a minimum of 8000 feet MSL (4000 x .5 + 6000 MSL = 8000 MSL). This formula is designed to reduce the risk of entering the turbulent rotor zone and will not necessarily give sufficient margin to allow for height loss caused by downdrafts.

The pilot who finds himself inadvertently in a mountain wave situation should take the following action:

- Slow to recommended NATOPS speed for turbulent air.
- Disengage autopilot altitude hold, if applicable, to avoid the possibility of stalling in a downdraft.
- Fly attitude if turbulence is encountered.
- Alter the route of flight by climbing, not flying parallel to ridge lines, or circumnavigating if feasible.

Mountain waves should never be taken lightly. In addition to the T-39 crash, mountain waves were identified in the crash of a C-118 and in extensive damage to a B-52 on a low-level flight. While this type of turbulence is obviously critical to traditional low fliers like helicopters, all aircraft are susceptible.

As with thunderstorms, avoidance of mountain waves is the best flight technique. Understand what conditions produce mountain waves, get a thorough weather brief, and be alert for visual indications of mountain waves. Perhaps the single most easily recognizable clue that mountain turbulence can exist is the presence of strong surface winds (in excess of 20 knots). The stronger the winds, the more likely the turbulence. If mountain waves look likely, circumnavigate or climb over the mountains using the altitude formula. Mountain waves can spell disaster for the uninformed or the unwary.

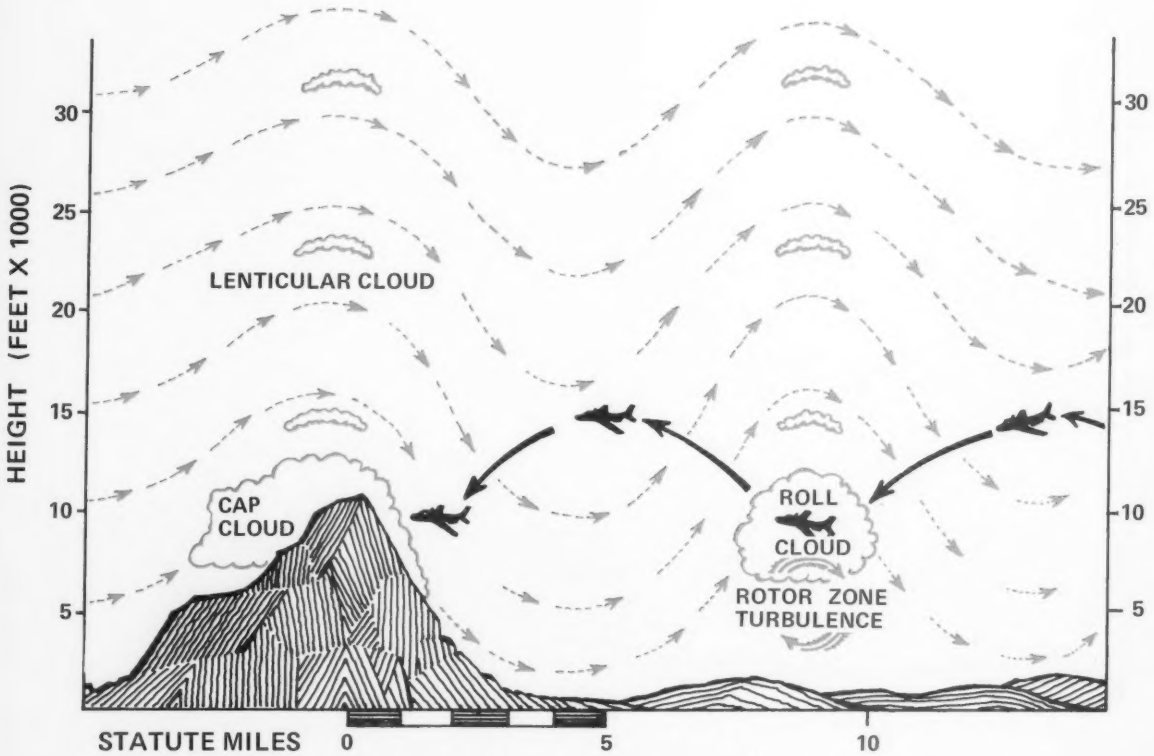


Fig. 1

Typical mountain wave pattern and associated clouds.

Cross-countries can provide some unexpected surprises. Weather conditions change rapidly, particularly in winter. Equipment failures or malfunctions can compound your troubles. Therefore, you've got to anticipate problems and have alternate plans lest you wind up in the proverbial hard place. Capt Gordon Eisert and Capt Nick Matranga of VMA-124, MARTD Memphis encountered such a situation last winter. Here is an account, narrated by Capt Matranga, of how they handled the unplanned events of a return cross-country to Memphis, forecast for 3000 broken, 3 miles visibility. The value of section integrity is clearly indicated. – Ed.

Sleet, ice, low ceilings ...and section integrity

By Capt Nick Matranga
and
Capt Gordon Eisert
VMA-124

"SHARK 21, Memphis Center, be advised Navy Memphis is closed for ice on the runway. What are your intentions?"

"Oh, great! Here we go," I remember saying to myself. Here we are IFR, and already these old A-4s are starting to break. I had already lost my radio transmitter (receiver was OK), my AJB-3 attitude gyro/heading system was not slaving accurately, and our destination – forecast to be 3000 broken and 3 – was now closed. Flight lead Gordon "Gordy" Eisert requested weather for Memphis International and Meridian, then switched us off frequency to discuss our options. (Here's a plug for A-4s with FM radios.) He asked me if I'd like to go to Memphis International and indicated that his TACAN and radio reception were intermittent.

A head nod, and we passed each other a thumbs-up!

Back up Center, we asked about International weather. They said a DC-9 had reported moderate to poor braking. Well, Gordy was thinking the same thing I was – without thrust reversers, anti-skid, or arresting gear, International was out.

By now we had passed Nashville, and our choice of alternate fields was somewhat limited. I knew both runways at Nashville Municipal were too short without arresting gear. The two best choices looked like Meridian and Columbus AFB, and Center reported the weather as the same: 700 overcast, 3 miles vis in freezing rain.

Based on the existing situation, we decided to try for Meridian NAS because it had A-gear, 36L was uphill, and I knew the area in case we got split up. (Here's a plug for really knowing your wingman.) Gordy told Center that Meridian was our new destination and that we'd like a direct cut and a higher altitude. Both of us were doing the same thing in our respective cockpit – burning up the whiz wheel figuring fuel and continuously looking for someplace else just in case. Running a computer, unfolding a map, and breaking our approach plates have long been recognized feats of considerable challenge in an A-4. Add flying formation in the "goo," and the feat is almost impossible. I tried anyway, since I have always felt uneasy flying form in the goo if I was unable to keep track of where I was and how both our fuel consumptions were standing. (You never know when you might have to take the lead – a philosophy we've both used since beginning to fly together. It has paid off several times in our past experience.)

Neither of us could get a lock on Meridian, but without saying anything, both of us tuned in Columbus AFB, just north of Meridian. I guess we all like to have that needle pointing somewhere and showing DME no matter where it s coming from. We were now down to 1800 pounds as the DME to Columbus locked on at 140.

"Shark 21, Memphis, I've got the updated observation for Meridian. Are you ready to copy?"

"Memphis, Shark 21, that's affirmative, go ahead."

"Navy Meridian weather 100 feet obscured, one-fourth mile in light rain, sleet, and fog."

"Oh, great! Can you give us an update on Columbus?"

"Roger, stand by. Columbus weather 700 overcast, freezing rain, and ice on runway."

Needless to say, lead turned us towards Columbus.

This was certainly not the type of weather report that makes you feel good, but it was better than Meridian. We had no other choice but to go direct to Columbus AFB. Gordy made it very explicit what we were going to do: en route idle descent to a GCA pickup, no long downwind approach or other delays getting into the field. In between all this, approach plates, maps, and en route supplements were flying all over the cockpit as each of us did some planning to back up each other. We both arrived at the same conclusion: it was going to be close, and there was no room for error.

Afterwards we realized we'd both thought about pickling our tanks, but since it looked like we could land with something around 700 pounds – providing nothing else happened – we decided not to take the chance. If any new delay or problem arose, we would have gone ahead and

done it.

Seventy miles out, we started our glide. The low fuel light came on bright and steady as we went into our descent – a constant reminder that we were fast running out of options. Clear ice started to form on the birds during our descent. We were soon to find out that this was not the only problem we would encounter.

"Columbus Approach, Shark 21 flight passing 5000 for 2500 assigned, requesting GCA pickup, over."

"Shark 21, Columbus, be advised both PAR and ASR radars are out. If you declare an emergency, however, we can use the scan radar to monitor a TACAN approach."

"Columbus, Shark 21, consider it an emergency." [Better some help than none.]

Well, it appears there is an Air Force regulation that if an emergency is declared, then obviously there has to be an aircraft bureau number associated with it. It seemed to me that after declaring an emergency, in icing conditions, low cloud layers, and poor visibility, no PAR or ASR, this wasn't really necessary. But Gordy figured the same as I did – let's save any arguments for the important things. He passed along a bureau number. (We looked at each other and shrugged our shoulders – what else could happen?)

Approach cleared us to the 15-mile arc for the standard TACAN approach. Lead said "nothing doing" and requested clearance direct to the final approach fix at 7 DME – straight into the field at the minimum safe altitude. We were cleared as requested.

The clear ice continued to accumulate around the windscreen and leading edge of the wings, but it wasn't thick enough yet to be dangerous on the first approach. The second, maybe!

After breaking out, we dirtied up. Gordy passed me the lead at 140 KIAS, 500 feet, and about 1 mile from touchdown with the runway in sight and on centerline. At this point, GCA came up and started calling glide slope info (not needed at this time, but we appreciated their hard work in getting the radar working). Taking no chances, I slowed down to optimum angle-of-attack and set down close to the edge of the runway. Twelve thousand feet of runway and a 15-knot headwind were good gravy, but I didn't want to take any chances without arresting gear. I hydroplaned a little, but braking was fairly good since the ice pellets hadn't yet started to accumulate on the runway. As it turned out, I was able to turn off halfway down the runway with no sweat.

In the meanwhile, Gordy had turned downwind. He requested to stay up GCA frequency and be cleared to land off a circling approach on that frequency. That way, if he inadvertently went IMC, he'd be up the right frequency for a second instrument approach. This was not the normal procedure, and the controllers had some difficulty in understanding, but he eventually got across the message. Fortunately, he was able to maintain VMC and landed uneventfully.

There was approximately 1 inch of water/ice on the taxiways as we taxied in, and when we shut down, there was about one-fourth inch of ice on our aircraft. We had to have help breaking the ice around the canopy to get it open. Although the weather wasn't the most hospitable, we were certainly glad just to be on the deck. (Our fuel on shutdown was about 700 pounds!)

Perhaps the most significant thought I took away from this high pucker factor flight was the value of section integrity. If I had been by myself, without a radio transmitter, I would have been in a real full blown emergency, groping around the sky looking for a place to land while Center tried to guess what I was doing. Also, by maintaining our section integrity, we were able to pool our knowledge and ideas – the old "two heads are better than one" concept. We exchanged groundspeed information, TACAN cuts, heading information, and fuel status to back each other up. We had very little trouble communicating in our partial NORDO situation using hand signals, mic clicks, and head nods. Any squadron that doesn't practice NORDO communications procedures should do so before their pilots find themselves in a situation like we encountered. We have been flying together for some time – and it was a good thing!

Beyond the value of section integrity, several things were reemphasized to us on this flight.

- You must keep cool, ahead of the aircraft, and flexible. Nothing is completely predictable on a cross-country – least of all weather! You've got to plan for alternatives and not commit yourself until all possibilities have been considered and you have chosen the best one for the situation.
- Be very specific with the controlling agencies about what you want to do when you reach an emergency situation.
- Declare a low fuel emergency rather than minimum fuel if your fuel states warrant it.
- As a wingman, be as totally involved in the flight as the leader. Blindly flying wing is asking for trouble. The leader could make a mistake and you wouldn't catch it, or you could be expected to take the lead without the foggiest notion of where you were.
- Know your aircraft. Know its systems, know its flight characteristics, and know landing techniques in different types of weather.

As this flight proved, "getting there" is not always half the fun. If you expect the worst, however, and have alternate plans available, you should be able to overcome the unexpected that so often occurs on cross-countries. ◄

Minor emergency; Major mistake

IT's a well recognized principle in naval aviation that there are very few emergencies that require immediate, memorized action. Most emergencies allow enough time to think before reacting, and many emergencies allow time to break out the emergency flip pad and read the correct procedure. The problem with immediate reaction based on memory is the increased possibility of taking the wrong action – sometimes with disastrous consequences. This was vividly demonstrated in a recent A-6 accident that resulted in the loss of an *Intruder.*

The accident flight originated as a refamiliarization flight for the pilot and the B/N. Both crewmen were attached to a T&E (test and evaluation) squadron requiring qualification in several aircraft. Although the pilot had over 800 hours in the A-6, he had not flown the *Intruder* for 105 days. The NFO was also A-6 experienced, but he had not flown the aircraft in 95 days. What's more, the pilot's total flight in all aircraft the past 90 days was also skimpy – 20.5 hours.

Approximately 4 minutes after takeoff, the pilot experienced a low speed noseup trim runaway (approximately 1 degree every 20 seconds). He could not counteract the runaway trim with normal stick trim, so he extended the RAT (ram air turbine). When this also failed to stop the trim, the pilot instructed the B/N to pull the trim circuit breaker and declare an emergency. The crew turned back toward base and commenced dumping fuel in anticipation of an emergency landing.

Meanwhile, the B/N reported that he "got it," which the pilot construed to mean he had pulled the trim circuit breaker. Thinking this, too, had failed to stop the trim runaway since the trim was still increasing, the pilot attempted to secure both generator switches. One minute and 40 seconds later, as the aircraft was turning final, the left and right fuel PSI lights illuminated, followed shortly by a dual flameout. After one unsuccessful abbreviated airstart attempt on the port engine, the crew ejected.

Investigation of the wreckage produced cockpit indications and fuel system components that positively identified the cause of the engine flameout: the pilot secured the fuel master switches instead of the generator switches, causing fuel starvation to both engines. The fuel master switches are guarded but are located immediately behind the generator switches. The pilot, pressured by the runaway trim and fearing impending uncontrollability, reacted hastily and secured the wrong switches.

Ironically, the emergency was, at most, a minor one. The A-6 is completely controllable with both full-up and full-down stabilizer trim. Thus no action other than

dumping and returning to base would have been necessary to bring the airplane back safely.

Not only was the action the pilot took unnecessary, it was also incorrect. The low speed trim motor malfunctioned at the time the stability augmentation system was engaged. With this condition, extending the RAT does nothing to solve the problem. Dropping the RAT is the procedure for runaway noseup trim in the A-4 – the aircraft the pilot had been flying recently. His next step – instructing the B/N to pull the trim circuit breaker – was also ineffective in correcting this situation. It really didn't matter, though, as postaccident analysis revealed that the circuit breaker had never been pulled because the B/N could not locate it. The pilot's final action, attempting to secure the generators, would have killed the trim movement, but it would also have resulted in total electrical failure and therefore was not a recommended procedure.

The trim problem originated in the automatic flight control system and could have been rectified by disengaging the AFCS by any one of several different techniques. The pilot's inability to troubleshoot the problem inflight and his unnecessarily hasty action resulted in the loss of the aircraft.

There were several factors in this accident beyond the pilot simply reacting hastily and erroneously to an emergency situation. The pilot and NFO's lack of currency in the A-6, the inadequate NATOPS coverage of the runaway trim procedures, and the absence of thorough refamiliarization training were all building blocks that set the stage for this accident to happen. As in so many aircraft accidents, had any one of the factors been removed, the accident probably would not have happened.

The pilot and NFO's lack of recent flying time in the A-6 was certainly a major factor in this accident. The accident aircraft was the only A-6 assigned to this squadron, and it had been down for supply or maintenance reasons for 82 of the 96 days preceding the accident. This is not necessarily unusual in a squadron with one-of-a-kind aircraft and low supply priority, but it places heavy requirements on supervisory personnel and aircrews to ensure that a systematic and thorough refamiliarization program takes place before the crew flies again. This was not accomplished in this situation.

The pilot in the accident read the NATOPS flight manual and emergency flip pad prior to the flight, but his most recent ground systems training was 5 weeks prior. Nor did he undergo any simulator training. To compound the problem, the B/N was no more current and just as rusty as the pilot.

The crew didn't get much help from reading NATOPS either. The A-6 manual has no emergency procedure for runaway noseup trim and no discussion about runaway trim causes and corrective action. Most endorsers to the accident report felt that the A-6's controllability at any trim position was common knowledge in the *Intruder* community. However, a section in the NATOPS manual addressing this situation might have refreshed the pilot's memory and prevented him from reacting without analyzing the emergency further.

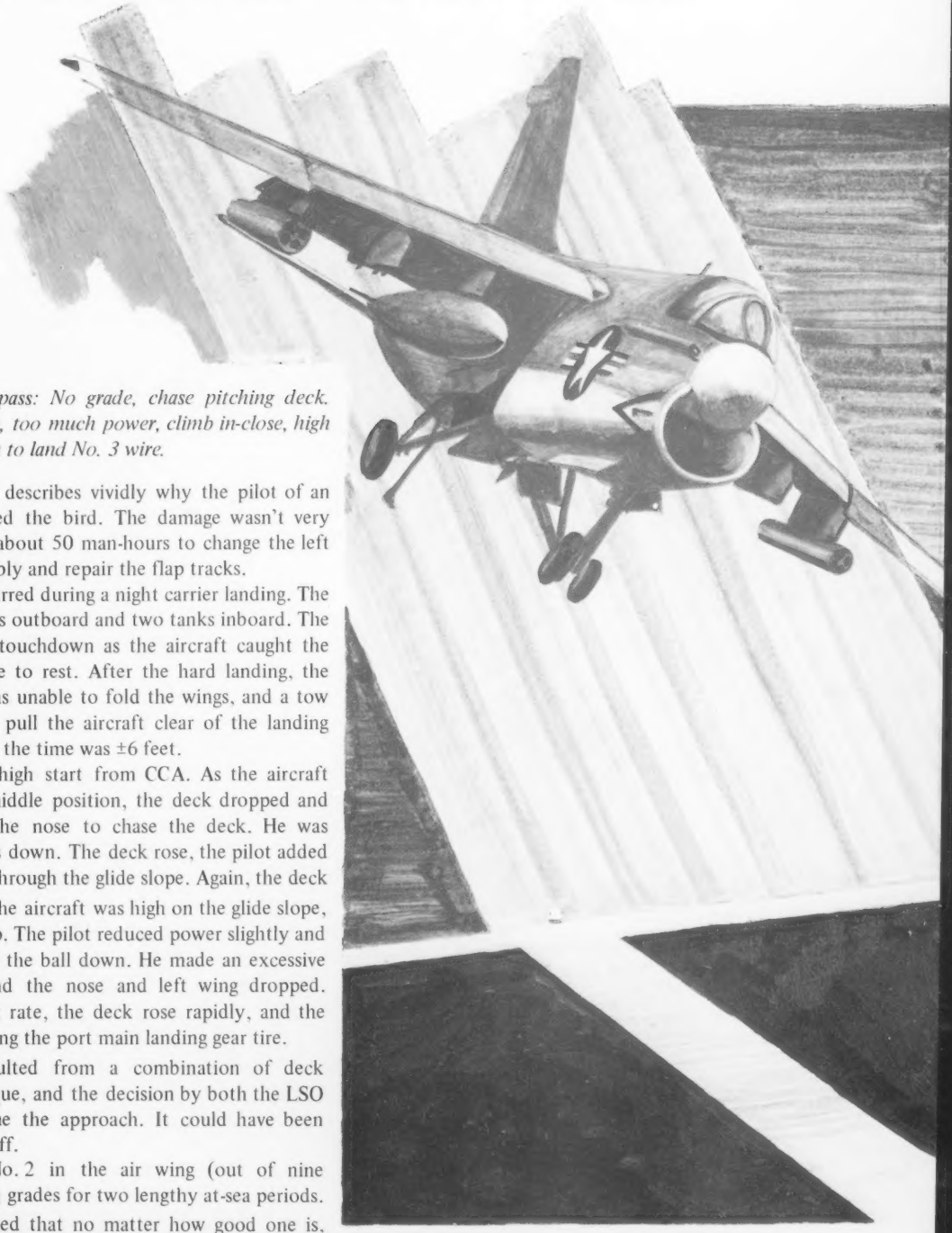
The prudence of locating the fuel masters and generator switches close together was questioned by the investigative board. Although the fuel masters are guarded, it is not difficult to lift them and secure the fuel flow to the engine. (Informal evidence revealed that several experienced A-6 pilots had done this in a simulator, but it didn't gain much attention since no aircraft accident resulted.) Endorsers to the accident report felt a change was not warranted, however, as "... the present design has been wholly satisfactory throughout the A-6's operational history and presents no hazard when proper emergency procedures are performed thoughtfully and deliberately."

While maintaining qualifications and currency in several aircraft in a T&E environment is frequently difficult, improved requalification and refamiliarization procedures are mandatory to preclude further accidents of this nature. Improved ground training, emergency procedures training in simulators, and/or refamiliarization flights with one crewmember current and qualified are all steps that can be taken to ensure aircrew proficiency. Additionally, the commanding officer of this activity took action to remove some of the ambiguity of requalification standards that existed by promulgating standardized minimums for currency and requalification requirements for each aircraft and mission.

The pilot involved in this accident was highly regarded by his commanding officer as an aviator and an officer. He had a Fleet tour in A-6s and had performed effectively in the T&E mission for almost 2 years. This should emphasize another old aviation cliche that "accidents can happen to anyone." Past experience, total flight time and hours in model are all important, but the crew that relies on past knowledge and experience to carry them through indefinitely is asking for trouble. Had this crew been more up to speed, it is probably safe to say that they would have felt less pressure to react immediately and could have taken the time to analyze the situation or seek help from ground experts. Every pilot should be intimately familiar with those few emergencies in his aircraft that require immediate memorized reaction. Then, in every other emergency, he should take his time – it's a lot safer. ◄

If you can't see the bright side, polish the dull side.

IT HAPPENS TO THE BEST



Landing grade for pass: No grade, chase pitching deck. Drop nose in middle, too much power, climb in-close, high at the ramp, ease gun to land No. 3 wire.

THE LSO report describes vividly why the pilot of an attack aircraft dinged the bird. The damage wasn't very serious, but it took about 50 man-hours to change the left tire and wheel assembly and repair the flap tracks.

The incident occurred during a night carrier landing. The aircraft had two pods outboard and two tanks inboard. The port tire failed on touchdown as the aircraft caught the No. 3 wire and came to rest. After the hard landing, the pilot reported he was unable to fold the wings, and a tow tractor was used to pull the aircraft clear of the landing area. Deck motion at the time was ±6 feet.

The pilot got a high start from CCA. As the aircraft reached the in-the-middle position, the deck dropped and the pilot lowered the nose to chase the deck. He was advised the deck was down. The deck rose, the pilot added power and climbed through the glide slope. Again, the deck dropped. This time the aircraft was high on the glide slope, approaching the ramp. The pilot reduced power slightly and was advised to work the ball down. He made an excessive power reduction, and the nose and left wing dropped. During the high sink rate, the deck rose rapidly, and the aircraft landed, blowing the port main landing gear tire.

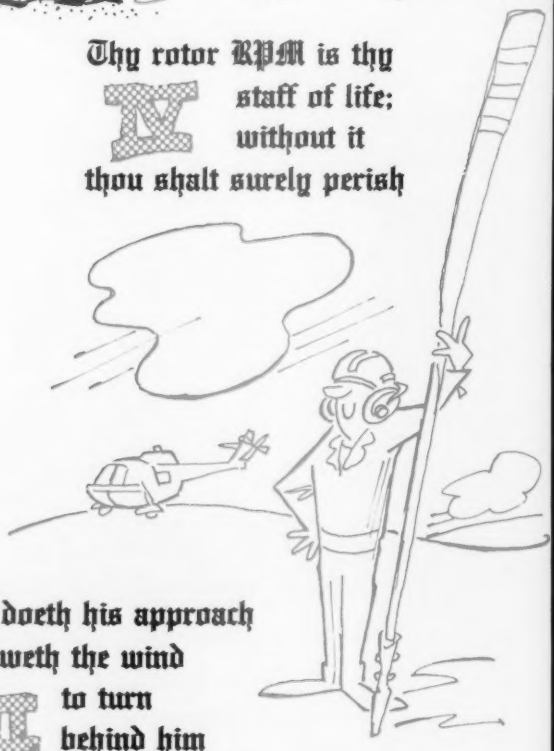
The incident resulted from a combination of deck motion, pilot technique, and the decision by both the LSO and pilot to continue the approach. It could have been prevented by a waveoff.

The pilot was No. 2 in the air wing (out of nine squadrons) in landing grades for two lengthy at-sea periods. It must be emphasized that no matter how good one is, incidents such as this can happen – even to the best. ◄

TEN COMMANDMENTS of HELICOPTER FLYING

Let infinite discretion
govern thy movement
III near the ground
for vast is thy
area of destruction

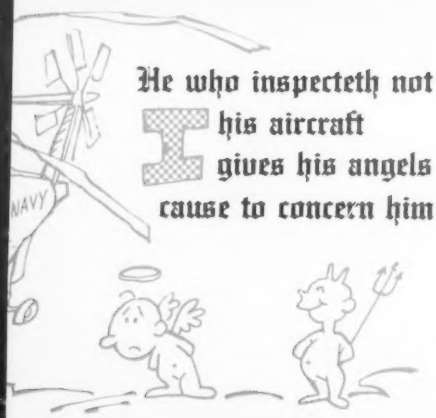
Thy rotor RPM is thy
IV staff of life;
without it
thou shalt surely perish

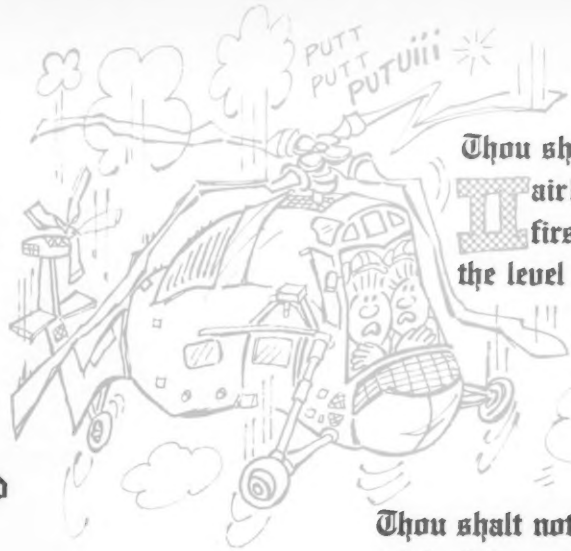


Thou shalt not let thy
confidence exceed thy ability
VI for broad is the
way to destruction

He that doeth his approach
and alloweth the wind
VII to turn
behind him
shall surely make restitution

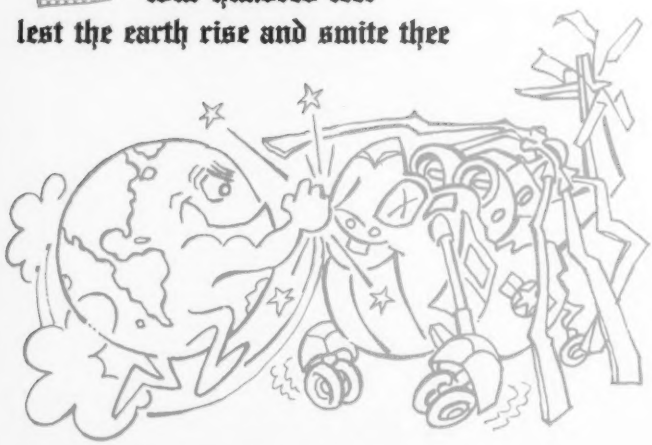
He who inspecteth not
I his aircraft
gives his angels
cause to concern him





Thou shalt not become
I airborne without
first ascertaining
the level of thy propellant

Thou shalt maintain thy speed
V between ten and
four hundred feet
lest the earth rise and smite thee



Thou shalt not make a
trial of thy center of gravity
VI lest thou dash thy
foot against a stone

He who allows his tail rotor
IX to catch in the thorns
curseth his children
and his children's children

Observe thou this parable
X lest on the morrow
thy friends mourn thee

Airfield Profile No. 3

NAS Dallas (NBE)

DALLAS, Texas – home of pretty girls, oil millionaires, Roger Staubach spirals, and a good cross-country refueling stop. NAS Dallas' good weather and convenient location make it an oft-used refueling base. There are, however, certain potential pitfalls that the transient pilot might fall into if he is not familiar with the field and the area. The following information is provided in APPROACH's continuing attempt to forewarn transient pilots about the bases they frequently visit.

Arrival Patterns. NAS Dallas is located about midway between Dallas and Fort Worth on the northwest edge of Mountain Creek Lake (a good visual identification feature). It is within the Dallas/Fort Worth TCA (terminal control area) in an area with a floor of 3000 feet, although the floor lowers to 2000 feet just 2 miles north of the field. Aircraft arriving from the east can expect clearance to Scurry, then Navy Dallas, while aircraft arriving from the west will be cleared through Acton. Aircraft approaching from the north will be routed through either Bridgeport or Blue Ridge, and southerly arrivals can expect a straight shot into the field. All these feeder TACANs are low altitude stations (L), but they appear on the High Altitude charts as well as the Low Altitude and Area charts (good things to have along even if you are flying jets).

VFR Arrivals. The present-day version of VFR arrivals consists of an en route descent to a visual approach when the airport is in sight. You will stay under radar control until usually 6-10 miles out from the field. If approaching from the south with Runway 17 the duty, when you contact Navy Dallas tower, you will be cleared to 1900 feet to intercept a 3-mile counterclockwise arc and report the break. Break altitude is 1900 feet with 1500 feet downwind. For Runway 35, you will be cleared straight in to the break. All breaks are toward the lake – away from Vought Aeronautics on the west side of the field.

IFR Arrivals. Navy Dallas has only one TACAN approach, and there is usually no problem getting it upon request. Regional Approach Control owns most of the airspace around Navy Dallas, so you can anticipate staying with them until about 10 miles from the runway. Dallas has its own GCA unit that will pick you up at that point, if you have requested a precision approach in advance. Multiple approaches are permitted – in fact, encouraged – at Navy Dallas. The good weather in the area doesn't provide as much opportunity for proficiency training as the GCA controllers would like.

Arrival Hazards. As with most Navy bases located in large cities, light plane traffic is a constant and serious accident threat. Located inside the TCA within 12 miles of Navy Dallas are no less than 10 civilian airports, including a

Runway 17 has a .4 percent downgrade that has caused several unprepared pilots to panic and blow tires trying to brake early.

Runway 35 at NAS Dallas.

gliderport. Furthermore, seven of them are located to the south of the airport, the area from which you most often approach NBE at low altitude. Even if you are under radar control, this volume of VFR traffic poses a significant midair threat that demands a vigilant lookout doctrine.

Obstructions. Approximately 9 miles due south of Navy Dallas sit five Texas-size towers, the tallest of which reach 2350 MSL (1535 AGL). The TACAN approach takes you *right over* these towers, and the GCA pattern and visual approaches to Runway 35 put you close to them. Therefore, exercise extreme caution not to go below the TACAN profile altitude or vectoring altitude. Notice that on the TACAN approach you have only about 600 feet of altitude clearance when passing over the towers.

Noise Abatement. FLIP Area Planning 1 has a noise abatement procedure for NAS Dallas that calls for pilots to "... keep power setting changes that create noise differences noticeable to the public to a minimum." Also, afterburner operations beyond the field boundary are prohibited unless safety of flight dictates.

Beyond this, there is a noise-sensitive housing area located on the west shore of Mountain Creek Lake. Therefore, when taking off on Runway 17 with a turnout to the west, delaying the turn until you are 3 or 4 miles (under VMC conditions) from the runway is the recommended procedure. All departures from NBE are via radar vectors.

Runway Peculiarities. Landing on Runway 17 – heading toward the lake – has been the source of many stories in naval aviation. Runway 17 has a .4 percent downgrade that somehow looks a lot steeper. Combine that with the lake right at the end of the runway, and many a pilot has been prompted to apply the brakes harder and sooner than was really necessary. While you should definitely be aware of the downgrade on this runway, particularly when adverse winds or runway conditions exist, it is nevertheless still an 8000-foot runway. And blown tires only make stopping more difficult.

Runway 17/35 is the only operative runway at NAS Dallas. Runway 13/31 has been closed. Watch the forecast winds when you're filing if crosswind landings are critical in your aircraft.

Arresting Gear. If you need to make an arrested landing due to crosswinds or slippery runway – no problem. Apparently going along with the Texas tradition of "more is better," the single runway has four – count 'em – four sets of bidirectional arresting gear. And just to be sure, a fifth set is going in at midfield. So, don't be bashful about requesting an arrested landing. It's probably the only shore facility where you can bag an OK 3 wire.

Transient Servicing and Maintenance. The transient line is open 0700-2300 local, 7 days a week with no PPR required

Nine miles due south of Navy Dallas, towers reach to a height of 2350 feet MSL. Beware!

(check your IFR supplement for recent changes). The transient line is located on the parallel taxiway just short of the approach end of the inactive Runway 31. To file a flight plan or get weather briefs, a truck will take transient pilots to base operations.

Since this is primarily a Reserve base, full services are available Saturday and Sunday, but extremely limited maintenance is available Monday and Tuesday. On drill weekends, you may experience refueling delays due to Reserve aircraft priority on the fuel trucks.

Miscellaneous. BOQ space is virtually nonexistent the first three weekends of every month (with the exception of holiday weekends) due to Reserve drilling. If the BOQ is full, base operations will provide transportation to an off-base motel in nearby Grand Prairie.

There are food machines in the base ops building and limited counter/hot-food service during working hours Wednesday through Sunday. There is also a Navy Exchange cafeteria in the main exchange building (walking distance from base ops), and food service in the BOQ Friday through Sunday of drill weekends. There is a small officers' club located in the BOQ where your favorite beverage may be procured.

Whether your purpose for going to NAS Dallas is RON or merely gas-and-go, a little preplanning and a lot of lookout doctrine will fairly well ensure that you will not shower the pretty Dallas girls, the oil millionaires, or the Dallas Cowboys with various parts of falling aircraft debris. Ya'll have a good flight now, ya hear. ◄

AIRSICK AND SCARED

(But still capable of doing you in!)

By LT Bill "Sweetwater" LaBarge
VS-33

ASK any naval aviator what the hairiest flying in the Navy is, and you will probably get answers like "night carrier landings, all weather terrain following low levels, or test and evaluation flights." While these are undoubtedly challenging evolutions, I contend that for pure terror, accident potential, and premature greyness, nothing can exceed the flying I did for 2½ years . . . as a primary flight instructor.

It's easy to tell the primary flight instructors. They're the ones with wings on their straitjackets and credit cards for psychiatric care. They are also the ones expected to keep fledgling aviators from doing unto themselves horrible and dangerous things. That the instructor is in the same aircraft with the student should provide sufficient motivation, but even with proper motivation, keeping students out of trouble is a never-ending challenge for the primary flight instructor. Take, for example, my first day in the "pits" as an instructor. It was almost my last.

As we pulled in behind another aircraft to secure for the day, the plane captain gave the stop signal. Interestingly, the student decided it was time to go to max power and raise the gear handle! After regaining my composure, I asked the student why he elected to use those procedures. He simply stated, "It seemed like the right thing to do at the time."

Instructing the "normal" student coming through primary was only half as fun (?) as instructing one of our foreign ally students. When you add language barriers and communications difficulties to the already abundant challenges of flight training . . . you'd better stand by! I remember one incident which was not so funny at the time. I call it the "Battle of the Mixture Control."

After a 45-minute brief, we launched to the training area to do some high work and demonstrate the emergency fuel system. Everything was going as planned until the demonstration of the emergency fuel system. Procedures dictate that when the emergency fuel is on, the mixture must be in the idle cutoff position as a precaution against a too-rich fuel flow. So, I turned on the emergency fuel and pulled the mixture back. The student, apparently not liking the mixture in the cutoff position, promptly advanced the mixture back to full rich and turned on his emergency fuel to boot! I promptly pulled the throttle back, and he just as promptly pushed it forward again. After this push-pull exercise continued awhile, I gave up and told the student to shut off his emergency fuel. Well, he not only shut off his emergency fuel – but the battery along with it! Running out of communication techniques, I resorted to a tried and true instructional technique used over the years – my kneeboard, thrown accurately at the back of my student's hardhat with a note that said simply, "Please turn on the G.D. battery prior to flying across Mobile Bay!"

Not all thrills for the flight instructor come in the air. One of the collateral duties for primary flight instructors is standing RDO (runway duty officer). This is particularly eventful with several solo students in the pattern. I recall one incident where a student had a generator failure. The series of events that followed was like the good news/bad news jokes.

The good news: he made it back to Saufley. The bad news: he was panicky. The good news: he had plenty of gas. The bad news: he didn't know it; the gas gage read zero due to electrical failure, and that's what he thought he had. The good news: the RDO was able to talk to him before his battery went dead. The bad news: he said he was out of gas and was going to land immediately. The good news: The RDO waved him off. The bad news: he didn't adhere to it. The good news: The RDO got out of his way. The bad news: the student landed – with his gear up.

While the weak performers certainly posed a substantial threat to the instructor's well being, I found out early that the relatively good performers can also do you in. It's easy to get lulled into a false sense of security when you do encounter a good stud, and letting down your guard for even a minute can be fatal.

I remember one flight which was a routine 12 check (safe for solo) with a student who had almost 200 hours flight time prior to coming into the Navy. His procedures were flawless (I thought). Well, after a couple of touch-and-go's at an outlying field, I felt the bird was ready to leave the nest. I told the student to make the next landing a full-stop in preparation for my exit to give him a few laps in the pattern all by himself.

While in the process of securing the back seat, I neglected to notice that the student hadn't raised the flaps prior to my exit. While standing on the wing attempting to secure the back seat, I began to feel an uncomfortable strain on my left foot. As I looked down, I could see that the student had belatedly remembered his procedures, and was raising the flaps. He neglected, however, to realize that my foot was being jammed between the wing and the flap. Had it not been for my flight boots, I would probably have no left toes today.

Since I made it through 2½ years relatively unscathed, I'd like to pass along some safety tips I learned that may account for my longevity (I also include blind luck and the will of God).

Continued

- Never *assume* a student will do anything just because it is (to you) the logical or natural thing to do.

- Impress on your students that trying to kill themselves *is not normal,* and imbue in them a sense of safety consciousness from the first day they start flight training.
- Teach them that NATOPS is the bible, but also make them think about what and why they are doing each procedure.
- Demonstrate in your own attitude and flying a professional approach and striving for perfection that the student can emulate.
- The student is relying on your judgment to tell him when he is safe for solo. Never compromise on this judgment – regardless of PTR (pilot training rate), time delays, or a desire to be a good guy.
- If one student makes a certain error, chances are 99 percent that future ones will too. Learn from every student and anticipate their errors.

The new T-34C is being phased in to replace the Bravo, and the flight training sequence is being modified to reflect the new turboprop's capability. One thing will never change, though – the flight student as he begins the transition from the streets of Hometown, USA to the body-numbing pace of the "Pensacola Pressure Cooker." And, of the many steps in an aviator's training toward those "Wings of Gold," perhaps none is more important than primary flight training. Here the student develops his basic airwork techniques that must be the building blocks for further training. Here the student formulates his first impressions of naval aviation and naval aviators. Here the student receives his first indoctrination in safety procedures and awareness. Thus the responsibilities of the primary flight instructor extend far beyond simply teaching a few basics of flying.

"Airsick and scared" probably describes the average student coming through primary. "Tired and scared" probably describes the typical primary flight instructor. When you stop being scared, that's when it's time to fall back and regroup. It's hard to keep your guard up when you're on the fourth hop of the day, but you must. The responsibilities of the primary flight instructor never cease.

This article contains excerpts from a book LT LaBarge is writing entitled "Airsick and Scared." – Ed. ◄

You shouldn't worry if you don't know all the answers. You probably won't be asked all the questions.

Ace L.

Bravo Zulu

ADAN David Spyker was assigned as a plane captain during VF-84's carrier qualifications aboard USS NIMITZ. While assisting in a crew switch in a squadron F-14, his aircraft was parked just forward of the island, starboard side, facing inboard. To facilitate the crew switch, the port engine had been secured, but the starboard engine was left running.

During the evolution a pilot from another squadron came from flight deck control and proceeded forward to man his aircraft. He saw the crew switch in progress and tried to pass under the F-14, assuming that the engines were secured. He began to stand erect in front of the intake of the F-14 starboard engine.

ADAN Spyker saw what was happening and recognized the extreme danger to the pilot. Spyker threw himself at the unaware pilot, grabbed him by the arm/LPA lifevest, and carried him clear of the intake.

ADAN Spyker's alertness and immediate recognition of the dangerous situation, coupled with his decisive action and disregard for his own personal safety, saved the pilot from serious injury or possible death. He certainly ranks high among the pros! Well done, ADAN Spyker. ◄

ADAN David Spyker
VF-84

Reprinted from COMNAVAIRLANT 011702Z Aug 77 *Weekly Safety Bulletin 57-77*

Aircraft shown immediately after touchdown.

THE RIGHT WAY

Final position of the *Corsair* as it came to rest on runway centerline.

TO HANDLE AN EMERGENCY

LT Hal "Wally" Wallace of the VA-37 "Bulls" was leading a section of two A-7s into the break at NAS Cecil Field, following a day bomb-and-strafe hop. After lowering the landing gear, the nosewheel of LT Wallace's aircraft still indicated up and locked. Visual checks by the wingman and tower confirmed that the nose gear was still up. LT Wallace climbed overhead the field and tried cycling the gear several times. Each time, his wingman reported the same thing: main landing gear operation was normal and nose gear doors opened normally, but the nose gear remained firmly up in the well.

As soon as they realized that the flight was experiencing difficulties, Cecil Field's tower controllers notified the squadron's duty officer; coordinated clear airspace above the field with Jacksonville Approach Control; began removing the wires from the arresting gear on one of the active, parallel runways; and switched the flight over to base radio frequency.

Meanwhile, a "think tank" of A-7 experts had assembled in VA-37's readyroom. Squadron personnel were supplemented by pilots and maintenance specialists from sister squadrons and the Light Attack Wing staff. Various methods for attempting to get the nose gear down were discussed and broadcast to the flight over base radio. LT Wallace attempted to dislodge the nose gear with positive G; negative G; by cycling the gear while maintaining positive and negative G; and by trying various combinations of EPP, generator switch, and tailhook positions (in case the failure was due to a faulty nose gear centering mechanism).

LT Wallace's wingman reported no change – the main landing gear and nose gear doors cycled normally, but the nose gear wouldn't budge. About this time, LT Wallace's low-fuel warning light came on. Having exhausted all other possibilities, he attempted emergency gear extension, but the nose gear remained firmly up and locked. LT Wallace was now committed to landing the *Corsair* with the nose gear up.

The arresting wires had already been removed from the runway, and an air wing LSO was on station on the same UHF frequency. NATOPS procedures for a nose-gear-up landing were reviewed on base radio with the pilot, with the LSO offering suggestions on technique for the landing required.

LT Wallace set himself up for a long straight-in and executed a flawless, minimum sink-rate landing which resulted in minimal aircraft damage. This amazingly light damage was attributed to the following techniques:

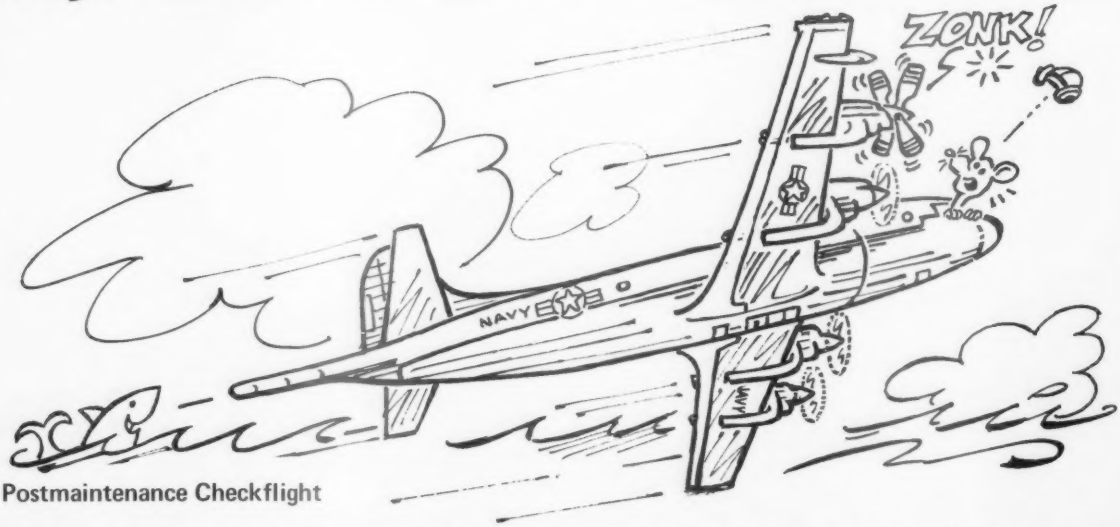
- The aircraft's fuel load was burned down to land at minimum gross weight.
- Touching down lightly at 16 units AOA, LT Wallace held the nose up with aft stick and eased the throttle to idle.
- Decelerating through 120 knots, he simultaneously secured the engine and "flew" the aircraft's nose down onto the runway. By placing the nose on the runway while he still had enough airspeed to retain positive UHT authority, LT Wallace was able to ensure that the nose contacted the runway as lightly as possible.
- As soon as the aircraft's nose was on the runway, he fed in full aft stick and full noseup trim to keep the nose as light as possible for as long as possible.

Rudder was sufficient to maintain directional control, and LT Wallace avoided applying brakes during the rollout. The aircraft stopped on runway centerline 5400 feet after touchdown.

LT Wallace's cool analysis of the required procedures and flawless performance in executing them prevented a potentially disastrous set of circumstances from becoming an aircraft accident. Well done. ◄

Light damage was sustained by the A-7 shown here being hoisted with nosewheel still retracted.

Anymouse



Postmaintenance Checkflight

VIOLATIONS of proper maintenance procedures and a lack of aircrew headwork almost got the better of a P-3 flightcrew. The crew was scheduled for a PMC flight to check the No. 4 prop. During the initial takeoff roll, the copilot called no airspeed indication, and the takeoff was aborted.

On return to the line, maintenance investigation revealed mud daubers in the pilot and copilot pitot tubes. The tubes were purged, and the pilot was informed by the gent performing the maintenance action that the aircraft was ready to go again.

The pilot started engines and proceeded to taxi and take off without receiving a release from maintenance control. While attempting an NTS check, the copilot informed the pilot that he was too fast to conduct the check. A quick comparison of airspeed indicators showed a 40-knot split between pilot and copilot indicators.

The crew was VFR and had the presence of mind to check the barometric altimeter against the radar altimeter by descending below 1000 feet over water. This maneuver verified that the pilot's pitot static system was the reliable one. Rather than aborting and returning to base, the crew decided everything else was fine and continued with the scheduled checkflight. During the NTS check on the No. 4 engine, the prop feathered automatically when the bleed air valves were closed and the power lever advanced. The engine was restarted and another NTS check performed. Again, a similar occurrence. The crew decided now that they had better terminate the flight before all their luck ran out. An uneventful landing followed at base.

The investigation that followed came up with the following results:

- The aircraft was in phase maintenance without pitot covers.
- No JCN was issued against the airspeed discrepancy.
- The system was not properly tested after work was performed on it.
- There was no CDI performed.
- Poor headwork by the crew for not immediately returning to base when the airspeed difference was discovered.

This incident caused a work center supervisor to lose his CDI certification, but it could have just as easily caused the loss of an aircrew – had the weather been marginal.

Promouse

Ears to Hear

IN accordance with NAVMAT P-5100, pgs. 2-8, para 0215, a hearing conservation program will be established in accordance with NCPI

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT
PREVENT AN ACCIDENT

792.5 and BUMED 6260.6A.

As of this date, our squadron has not begun a program.

We presently have one man in the squadron who has been told he must either change his rate or take a medical discharge. This hearing problem was discovered when he took a flight physical.

These problems should be caught long before they reach a disabling stage, and would be if safety instructions were followed. In this particular case, the 68dB loss in hearing might not have resulted, and the Navy would not be paying for a hearing disability if this man takes a discharge.

I believe that hearing conservation programs would cost much less in the long run than the disability payments that are made, or will be made, due to the lack of them.

Hearing Conservationmouse

Safety Review

RECENTLY, the higher commands indicated time frames for holding safety reviews. Good idea, right? Well, my squadron complied with the wording of the message, but not the intent. We held a safety review – and a good one. There was only one problem – the attendance was rather poor. Eleven out of 39 pilots showed up, and 30 of the 200 maintenance personnel bothered to attend. That's not too surprising when you consider that the commanding officer, executive officer, operations officer, and several detachment officers-in-charge weren't there either. We had the safety review, okay, but only for a selected few.

Safety is EVERYBODY'S BUSINESS. The emphasis has to come from the commanding officer, and he must hold each and every man and woman in his outfit responsible for that safety (including safety reviews). If the management doesn't show concern for safety, what are the troops going to do?

Learn from our mistakes. Make safety a reality, not just something to talk about.

Lipservicemouse

Incomplete Panel

UPON completion of a P-3 Pilot/FE NATOPS check, pilots were switched and normal pattern work was commenced.

After a touch-and-go, the No. 2 engine oil quantity gage began to show a rapid decrease in quantity. The engine was feathered, but a large amount of blue, oily smoke continued to come from the engine. After what seemed like a very long time, but which was probably only 10 minutes, the smoke slowly disappeared and the crew began to relax. Upon scanning the forward circuit breaker panel, the engineer noticed that the engine oil tank CBs, which had been pulled by the instructor engineer from the previous NATOPS check evolution, were still out. Thus when the engine was feathered, the engine oil tank shut-off valve had not closed, and oil continued to gravity flow into the feathered but still hot engine through the broken seal and into the turbine.

This mouse would like to suggest, with P-3s anyway, that the Restoring Electrical Power Checklist be reviewed when the NATOPS check portion of a sortie is complete.

Oilymouse

Park Where?

ON 16 June 1977, during a practice parade of approximately 200 people, a CH-46 taxied in and parked 10 yards from a group of 20 people. No one wore goggles or ears because it was a parade practice.

With 200 people spread out along the flight line in formation, it should have been quite obvious to the pilot of the aircraft that "his" spot would not be a smart place to park.

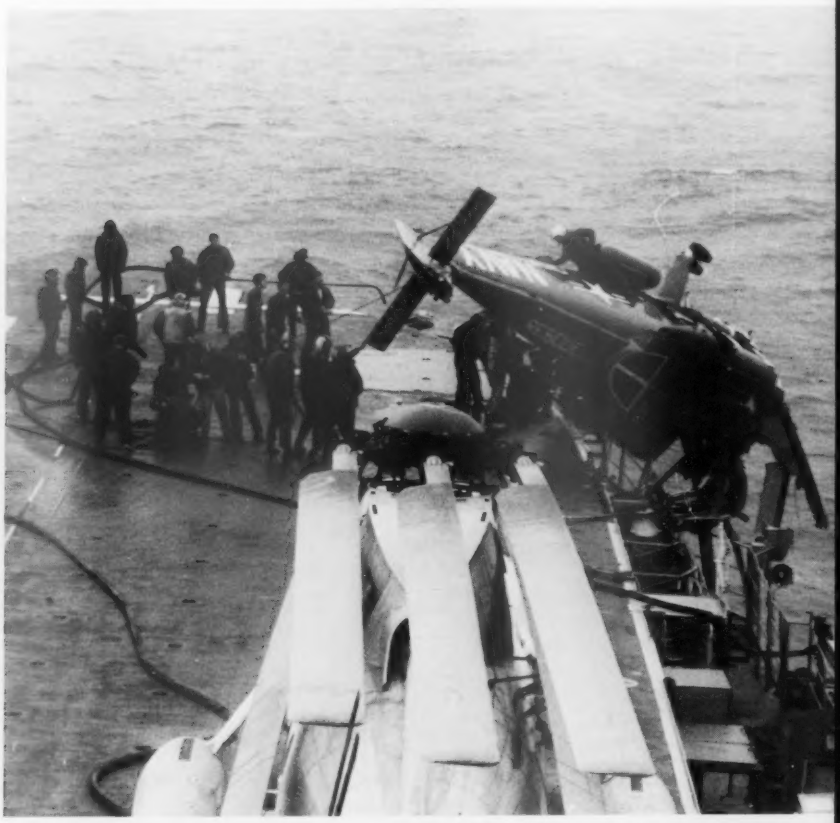
One person in the group ran toward the aircraft pointing to his eyes and ears, but no heed was taken by the pilots. In they came, continued to turn, and shut down. Spaces were available four to five spots away, but no effort was made to park there.

Solutions: issue eye protection and ear protection to the 200 participants of the parade; have quiet hours; or use *common sense.*

Unsafemouse

Launching a LAMPS helicopter from any ship's deck requires a thorough knowledge of shipboard procedures; proper use of hand signals; two-way radio communications between Pri-Fly and the aircraft; and coordination between the LSE and the pilots as well as between the LSE and the chockmen/chainmen. A breakdown anywhere along the line could result in an aircraft accident. This is the story of such an accident in which . . .

ONE DIED



The final position of the helicopter in catwalk immediately after the accident. Man on top of helicopter is first crewmember (sensor operator) exiting the aircraft.

THE SH-2D was on spot one in a 15-minute standby status. The crew was alerted to launch. The HAC and copilot strapped in with the copilot in the right seat, as it was his turn to take off.

They made normal engine starts and were given the OK to engage rotors. After the engines were burning and the rotors turning, they became occupied with the checklists. The LSE got the HAC's attention and gave a radio signal (pointed at his headset and then to the pilot). The HAC tuned the No. 2 UHF to the tower frequency and gave a call.

While the HAC adjusted various communications and navaids equipment, the tower gave him a vector to datum and advised that the ship was turning to launch heading. The HAC wrote down the vector, then looked up at the LSE and gave the signal to pull pins. When the LSE acknowledged the signal, the HAC looked back down and continued the checklist with the copilot.

The HAC vaguely remembered seeing with his peripheral vision a chainman break down a chain on the port mainmount. It didn't register then, but later the HAC stated emphatically that he gave no signal to remove chocks or chains.

The HAC next focused on the instruments to see if the ASE (automatic stabilization equipment) had warmed up. While checking various gages, the HAC felt the tail moving to the right, followed by a drop. He looked outside as he got on the controls but didn't take them away from the copilot.

The copilot had completed a control response and trim

check and was also scanning the gages when he felt the same tail movement. The HAC requested him to check his chock and chains, which the copilot did. His chock was in place and at least one of two chains were still attached to the starboard mainmount.

Moments later, the aircraft moved aft and settled in back, causing the nose to pitch up. Both pilots kept the controls neutralized. However, the helicopter began bouncing on deck. (One witness thought the helo was entering ground resonance.) The helicopter moved left, right, and back to the left. Then the nose pitched down and the main rotor blades impacted the deck.

Once the blades struck the deck, the helicopter bounced even more. It was gyrating and vibrating, causing loose articles in the cockpit to fly about. Again the aircraft moved right and aft and felt like it was lifting off the deck. The HAC shut down the engines with the engine condition levers. However, the helo rolled over, and the still-turning rotor head and blade stubs walked the helo over the side into the safety net.

When all movement stopped, the crew unstrapped and carefully climbed out, eventually stepping from the fuselage onto the flight deck. Tragedy had struck, however, and the LSE, who is always unprotected, was almost cut in two by shrapnel from the blades. It is conjecture, of course, but if he had hit the deck the moment the blades hit the deck, he might have survived. A blueshirt on the starboard side was knocked into the safety net by the helo fuselage. He had the presence of mind to lie flat, close to the ship in the net, and avoided being crushed by the helo as it fell into the net.

A breakdown in procedures and signals began the tragedy. After receiving the signal to remove pins, the LSE signaled Pri-Fly with a "double thumbs up" (ready to launch). The pilots had given no such notification. The air boss (not a helicopter pilot) noted the ship passing through 090 degrees, still turning toward the launch heading of 055 degrees. Prelaunch information was passed by radio to the pilots. Winds were about 040 degrees, 26-30 knots. The air boss instructed the LSE to remove chocks and chains, and the LSE signaled the blueshirts to take such action.

As the tiedowns were removed, the tail began to move. Ultimately, four of the six chains were released, but a chain on each mainmount never was released.

One may assume there was a good chance of ground instability once the tail dropped and the gyrations and vibrations began. There was also a good possibility with the wind direction and velocity that the helo was in the translational lift region and wanted to fly. This, plus the deck motion, might account for the nose pitches.

The time from the tailwheel drop to rollover was about 10 seconds. Once the sequence of events had begun, the accident was inevitable. ◄

The photograph above shows the flight deck searing caused by helicopter main rotor impact.

This is the port mainmount and its tiedown ring, which was forcibly removed from the wheel hub during the accident.

Letters

The *Velcro* G-Suit's Fine!

NAS Key West, FL – LT Van Devender's article on flight gear problems ("Flight Gear Problems: NADC's Point of View," SEP '77 APPROACH) was most informative. It was also reassuring to us Fleet types to know that our cries for help are being heard. However, I disagree with his comment that *Velcro* is unsuitable for G-suits as a replacement for lacings. I have been wearing a test sample G-suit (CSU-15/P high-temperature resistant) for the past 5 years. This *Nomex/Velcro* G-suit with soft, integrated hose has functioned without incident for this entire time. I consider NADC's test of the *Velcro* fastener for G-suits as inappropriate and invalid (i.e., " . . . the *Velcro* failed to withstand repeated opening and closing.") *Nobody* repeatedly relaces or adjusts their G-suit once it has been fitted to him. It is merely zipped on and off as fitted. Granted, a certain amount of adjusting may be required with weight gain or loss, but this is infrequent and has proven inconsequential to wear and tear on the *Velcro* over the last 5 years.

I often receive inquiries from other aviators as to where they can get a G-suit like mine, but alas, there are none in the system. What has happened to this model? Where is it now? Seems to me we have had a perfectly good product in existence for 5 years, but it has not been made available to the Fleet. Over.

CDR L. L. Johnston
RVAH-1

• LT Van Devender was contacted to provide an answer to your question. It appears that many people in the test group for the *Velcro* G-suit were in fact loosening the *Velcro* fasteners every time they put on the suit for greater ease in getting it on. Once it was zipped up and loosely fitted, they would tighten it via the *Velcro*. This did wear down the pile, causing the G-suit to be unable to sustain high G loads. Furthermore, the *Velcro* pile led to increased bulk at the back of the legs, causing some discomfort and bunching in the back of the knees. Therefore, NADC decided that *Velcro* was not the way to go. There is a new lacing design that will be used for fitting G-suits in the near future. It will substantially reduce fitting time.

If you have any further questions about the *Velcro* G-suit or any flight gear, LT Van Devender would welcome your call at Autovon 441-2847.

Re "VERTREP Vertigo"

NAS Norfolk, VA – The combination of the article "VERTREP Vertigo" and the comments by LT Refo of HC-3 in the AUG '77 issue of APPROACH cause me to take pen in hand once again and vent my spleen! I often wonder as I read through accident endorsements such as the one detailed in "VERTREP Vertigo," where is the admonishment for the officer in charge of the detachment, who launched his people when they told him they were unsure of their capabilities in light of the circumstances?

And how about the folks in command who determined that the "ships' schedules precluded the postponement" of this vital mission, and pressured the OinC into the launch? Hogwash, I say! How long was the delay while the bodies and wreckage were being sifted out of the ocean? How long are we going to keep on killing people when all of the danger flags are flying right in front of our nose? When in the name of heaven are we going to stop killing well-trained, highly qualified and designated people, because some boat driver knows all there is to know about flying machines and doesn't need the advice of any airedale; or some jet guy knows that helos can do anything without regard to what the helo driver says?

As for the next pilot who flies with a timid, indecisive copilot who barely got through flight school and pushes that teenage flying machine to the prescribed limits in an attempt to learn his own limitations – I hope that timid copilot has enough moxie to offer the pilot a choice between a professional approach to aviation and a kneeboard across the nose! Great balls o' fire, folks! Aviation safety is not some pinball game where you shake it any way that suits you and then total up your score!

We've got to use everything we have at our command to prevent needless death. If we have an expert, we've got to take his advice – parochialism be damned. We've got to learn to spot the danger signals and act in the best interest of doing the job with

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maximum safety, not in the best interest of how it will look on the report card if we say, "Sorry, boss, we just cannot do it without unnecessary risk." And as for judging others, remember that the best judge of your capabilities is you. I've never met a timid, indecisive pilot, but I've met quite a few who abused a tired machine when the mission required far less. And I've met a few with the lack of confidence and training that manifested itself as reluctance to see how fast it would go, or how high, or how low, and I'll tell you, I much prefer that kind of person to train and build confidence in than the other end of the spectrum.

I guess I can only hope that each time someone dies in a purely preventable accident, everyone involved resolves that never again will they be party to the web of circumstances that caused the accident.

LCDR Mariner G. Cox
FASOTRAGRULANT

Handy Flashlights

FPO, San Francisco – Recently, our squadron discovered what we think is a good thing. All those aviators looking for a strong, small, and convenient flashlight can find what they're looking for under the following stock number: NSN 6230-00-125-5528. It's called the Patient Examining Disposable Flashlight. They come in a box of 12, and when purchased in quantities of 200 or more, they sell for about 15 cents each.

We have made them available to our pilots, and most report that the lights last a long time. They're strong in intensity for their size and work out very well for use during preflights. Moreover, they are extremely convenient in the cockpit and fit in an aviator's pencil pocket on his flight suit.

LtCol W. J. Smith
Commanding Officer
HMH-462

Re "Tower, say your winds!"

824 Squadron, RNAS Culdrose – LCDR Vivian's article, "Tower, say your winds!", in the JUN '77 APPROACH would suggest that the air boss on a USN CV has more difficulty finding the required wind than his Royal Navy counterpart. It may be worthwhile considering how the *Sea Kings* from a RN CV operate, particularly since no other nation operates similarly.

D squadron at RAF Boscombe Down has been developing dynamic interface envelopes since the beginning of the RN WASP program in the early sixties and has provided timely criteria for shipboard helicopter work. The graph for the *Sea King* Mark 1 was developed in January 1970, before any unit was formed. No criteria is provided for CVs, but the flight reference cards contain an envelope for "Operation from Ships Other Than Through Deck." The graph uses wind relative to the aircraft head rather than ship's head, and has the additional criteria of weight; the graph goes 2000 pounds over maximum gross weight since a temperature correction adds 130 pounds for each degree C over 20.

Royal Navy CVs are considered airfields, but the embarked *Sea Kings* use the graphs in the flight reference cards. Even so, the operations provide for a much greater latitude than the NATOPS envelope, and in some situations the RN criteria would appear to be safer. Using an example wind of 345 degrees relative at 15 knots, the H-3 aligned "to the centerline of the angle of the axial deck" would not be permitted to launch; nor would respotting the aircraft into relative wind help. On the other hand, the *Sea King* operations would be permissible up to weights of approximately 19,700 pounds; respotting would increase launch and recovery weights to 20,000 pounds maximum. However, if there was only 5 knots of wind from ahead, the H-3 would be permitted to take off, presumably at weights of 21,000 pounds and very high temperatures. The *Sea King* would be restricted in such conditions.

Hopefully, a more flexible landing and takeoff envelope is in progress now, one that will provide additional allowances for weight and temperature.

LT J. P. O'Brien, USN
Helston, Cornwall, England

What Does the Rotating Beacon Mean?

San Nicolas Island, CA – Recently, while driving past a Navy airfield during the hours of darkness, I passed that airfield's rotating beacon (in an automobile) and noted the standard split white light followed by the green lights as the beacon rotated. Suddenly I became quite startled, as I knew that particular Navy airfield was nonoperational during the hours of darkness. Yet I was seeing a beacon that was telling me that I was at an open operational military field. I am a designated naval aviator with over 8200 hours flight time, and way back when I was taught, the split beacon white/green light was a haven should I experience lost communication or electrical failure in IFR, night, or similar undesirable conditions. Now I learn this is not necessarily true! I asked several other naval aviators in the area what each thought the meaning of the beacon was and *each* one thought exactly the same thing that I did! I contacted the ATC personnel responsible for operation of that Navy airfield and learned that existing applicable regulations, OPNAVINST 7110.65 and AIM Part I, are nonspecific in requirements for a definite meaning to what the split white/green lights mean other than a military airfield is near the location of the beacon. In other words, what I and the other naval aviators believed true regarding rotating beacons all of these years proves now to be false.

It appears to me that a serious "glitch" exists regarding beacons and their purpose as well as what information they are intended to provide pilots. Please give us the "straight skinny." I suggest that whatever is correct be incorporated in OPNAVINST 3710.7 and the above two mentioned references. The present "iffy/maybe" operation of airfield beacons, especially to pilots who interpret them erroneously, is simply providing an excellent scenario for an accident waiting to happen.

LCDR Robert D. Nedry
OLF San Nicolas
OinC

• The FAA Handbook states that beacons shall be on for all hours of darkness and during the day when the field becomes IFR. OPNAVINST 3721.1G, para 234B, the Navy Facilities Handbook, states the FAA guidelines will be followed except that all lights on the field shall be shut down when the airfield is not operating, with the exception of obstruction lights and rotating beacons that are used for visual orientation in a metropolitan area. According to this guidance, unless the airfield you observed was located in a city area, the beacon should have been secured. It also means that *every* military airfield that has a beacon illuminated may not necessarily be open. ◄

Statistics are like a bikini; what they reveal is interesting, but what they cover is vital.

Ace L.

Vol. 23 No. 5 NAVAIR 00-75-510

approach

CONTENTS

1 An Interview With the Chief of Naval Air Training
6 The Night My Goose Was Just About Cooked (frozen)! By LT W. W. White
8 Mountain Waves: A Powerful and Dangerous Force
10 Sleet, Ice, Low Ceilings . . . and Section Integrity By Capt Nick Matranga and Capt Gordon Eisert
13 Minor Emergency; Major Mistake
15 It Happens to the Best
16 Ten Commandments of Helicopter Flying
20 Airsick and Scared By LT Bill LaBarge
24 The Right Way to Handle an Emergency
28 One Died

DEPARTMENTS

18 Airfield Profile: NAS Dallas
23 Bravo Zulu
26 Anymouse
30 Letters

Pg. 1

Pg. 18

Pg. 24

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DISTRIBUTION/Requests for distribution changes should be directed to NAVSAFECEN, NAS Norfolk, VA 23511, Attn: Safety Publications Department. Phone: Area Code 804, 444-1321.

PRINTING/Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

CREDITS/Company artist A. Whyte depicts Sikorsky's new Mk III helicopter in action. IFC Photo: Harry Gann, McDonnell-Douglas; Pg. 4 Photo: Beech Aircraft; Pg. 18-19 Photo: Richard P. Shipman.

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☆ U. S. GOVERNMENT PRINTING OFFICE: 1977—735-047/15

NORDO? Never!

By LT Mike Harris
VA-15

ONE of the most common (and frustrating) emergencies is NORDO. Admittedly, a total NORDO situation doesn't exist very often. Considering all the communication equipment aboard Fleet aircraft, including ADR and IFF, only a total electrical failure (including emergency generator failure) would completely eliminate communications. But even then there is still one piece of equipment that gives two-way communications: the PRC-90 survival radio. This handy little device functions under almost any situation (except submerged), and although range is limited and audio quality is not great, it does provide adequate two-way communication with nearby stations.

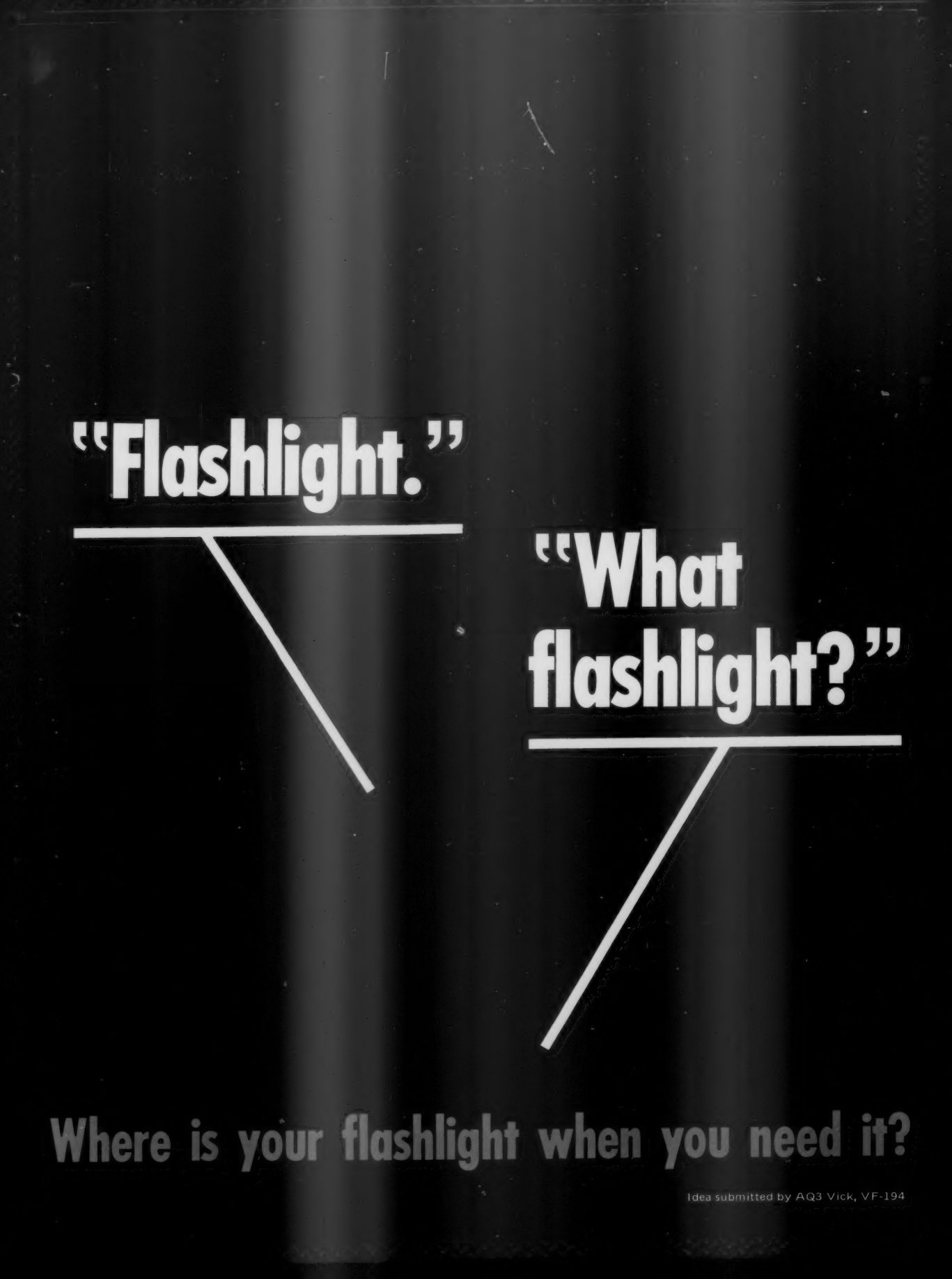
The only problem with using the PRC-90 in a tactical aircraft is getting the audio from the receiver into the pilot's ear. Due to cockpit noise and the difficulty (and nonadvisability) of removing a helmet, the PRC-90 in its present form is awkward to use while airborne. The earplug furnished with the set can be inserted into the ear underneath the helmet, but this can also be a cumbersome maneuver.

One idea to rectify this problem is to modify the earplug cord to incorporate a jack for the helmet headset plug vice the earplug. This is a simple modification using parts readily available from the PR shop. Shown here are pictures of one version of the modification.

By simply unplugging the helmet from the aircraft and plugging into the modified cord, the PRC-90 is patched into the headset. The radio will have to be handheld to transmit, but for monitoring or receiving either guard or 282.8, it sits nicely in its pouch in the survival vest with the antenna vertically extended. It may also be laid on the glare shield.

We have submitted this proposal as a Benny Sugg and have requested interim approval from AIRLANT to use the modification, pending final approval. AIRPAC has already given its squadrons interim approval to use the modification.

This simple, inexpensive minor modification can pay big dividends on a dark and stormy night when your radio quits. Hopefully, adoption of this fix will mean your next NORDO may not be as bad as your last. ◄


"Flashlight."
"What flashlight?"
Where is your flashlight when you need it?
Idea submitted by AQ3 Vick, VF-194